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The Assassin Bug Genus *Polytoxus* (Insecta: Heteroptera: Reduviidae) from Vietnam, with the Description of a New Species

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Five species of the reduviid genus *Polytoxus*, including a new species, are reported from Vietnam: *P. eumorphus* Miller, 1941, *P. rufinervis* Hsiao, 1965, *P. selangorensis* Miller, 1940, *P. bicolor* Villiers, 1943, and *P. hiemalis* sp. nov. The former three are recorded from Vietnam for the first time. The new species is distinguished from the most similar one, *P. femoralis* Distant, 1903, by the brownish-yellow tibiae with black apical annulations, the apices of the hindfemora extending well beyond the tip of the abdomen, and the anterior pronotal lobe not being carinate marginally.

Key Words: Heteroptera, Reduviidae, Saicinae, *Polytoxus*, Vietnam

Polytoxus, widely distributed in the Old World, is the largest genus in the reduviid subfamily Saicinae, containing more than 70 described species (cf. Maldonado Capriles 1990). Of about 30 species found in Southeast Asia, only one, *P. bicolor* Villiers, 1943, has been recorded from Vietnam, probably due to insufficient research and fieldwork.

Based on specimens of *Polytoxus* collected by our colleagues and us in Vietnam, we here describe a new species, *P. hiemalis* sp. nov., and record four other species, *P. eumorphus* Miller, 1941, *P. rufinervis* Hsiao, 1965, *P. selangorensis* Miller, 1940, and *P. bicolor*, the first three of which are newly recorded from Vietnam. Provided for each are diagnostic descriptions, color photographs of the adults, and illustrations of the male genitalia. These five species may be separated by the key given at the end of the text.

All specimens are deposited in the collection at the Laboratory of Insect Resources, Tokyo University of Agriculture, Kanagawa, Japan.

Systematics

Polytoxus eumorphus Miller, 1941
(Fig. 1)

Polytoxus eumorphus Miller, 1941: 779.

Diagnosis. Body and appendages covered with long, erect setae much longer than width of forefemur; each hemelytron with one vein extending from base of basal (smaller) cell; median process of male genital capsule bent posteriad near base with small projection apicoventrally. Body length 5.3–6.0 mm. Humeral width 1.1 mm, excluding humeral spines.

Specimen examined. [Southern Vietnam] 1♀, Phu An, Tan Phu, Dong Nai Prov., 29.xii.2001, T. Ishikawa.

Distribution. Peninsular Malaysia (type from Selangor), southern Vietnam, Japan (the Ryukyus).

***Polytoxus rufinervis* Hsiao, 1965**
(Fig. 2)

Polytoxus rufinervis Hsiao, 1965: 114, 119.

Diagnosis. Body black laterally with red connexivum, red head and pronotum, and black median spot on posterior pronotal lobe; yellow hemelytra broadly darkened medially with red bases and costal margins. Body length 11.0 mm. Humeral width 1.6 mm, excluding humeral spines.

Specimens examined. [Northern Vietnam] 2♀, Sa Pa, 1900 m alt., Lao Cai Prov., 20.vi.1999, Y. Nakatani.

Distribution. Northern Vietnam, southern China (type from Yunnan).

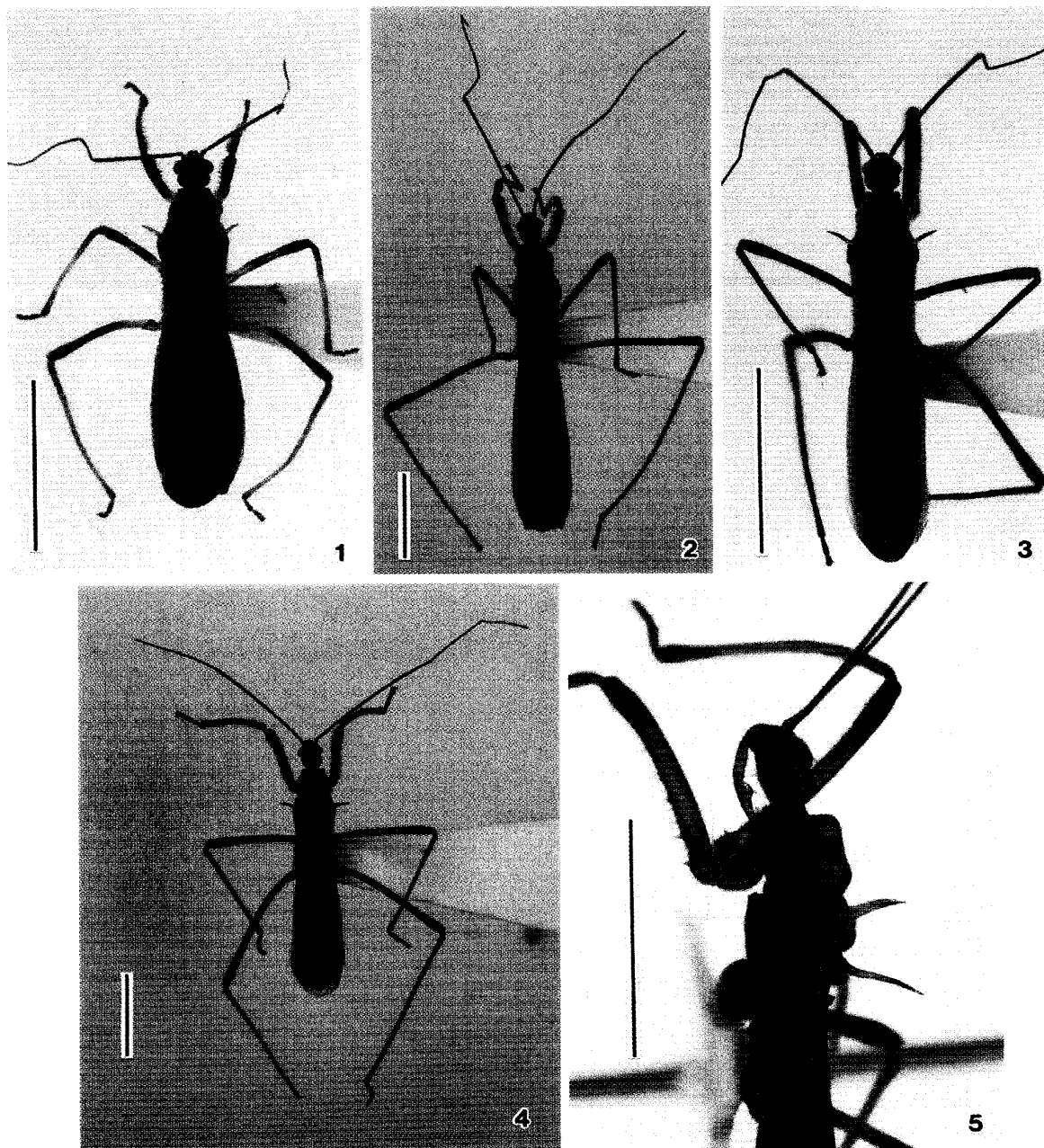
***Polytoxus selangorensis* Miller, 1940**
(Fig. 3)

Polytoxus selangorensis Miller, 1940: 426.

Diagnosis. Body black; head red, often with black longitudinal stripe on dorsum; humeri red; costal margins of hemelytra yellow; acute median process of male genital capsule armed ventrally with pointed triangular projection near apex. Body length 6.0–8.3 mm. Humeral width 1.0–1.5 mm, excluding humeral spines.

Specimens examined. [Southern Vietnam] 1♂, near Tuyen Larn Lake, Ward 3, Da Lat, Lam Dong Prov., 22.xii.2001, T. Ishikawa; 3♂, 1♀, Lam Sinh, Ward 5, Da Lat, Lam Dong Prov., 23.xii.2001, T. Ishikawa; 2♂, 4♀, Van Thanh, Ward 5, Da Lat, Lam Dong Prov., 23.xii.2001, T. Ishikawa; 1♀, Vallée d'Amour, Ward 8, Da Lat, Lam Dong Prov., 24.xii.2001, T. Ishikawa; 2♂, Loc Thang Ward, Bao Lam, Lam Dong Prov., 27.xii.2001, T. Ishikawa; 7♂, 4♀, Dambri, Bao Loc, Lam Dong Prov., 28.xii.2001, T. Ishikawa; 5♂, 2♀, Phu An, Tan Phu, Dong Nai Prov., 29.xii.2001, T. Ishikawa. [Northern Vietnam] 2♂, Lam Truong Tan Lap, Ham Yen, Tuyen Quang Prov., 19.viii.2000, T. Ishikawa and K. Okajima.

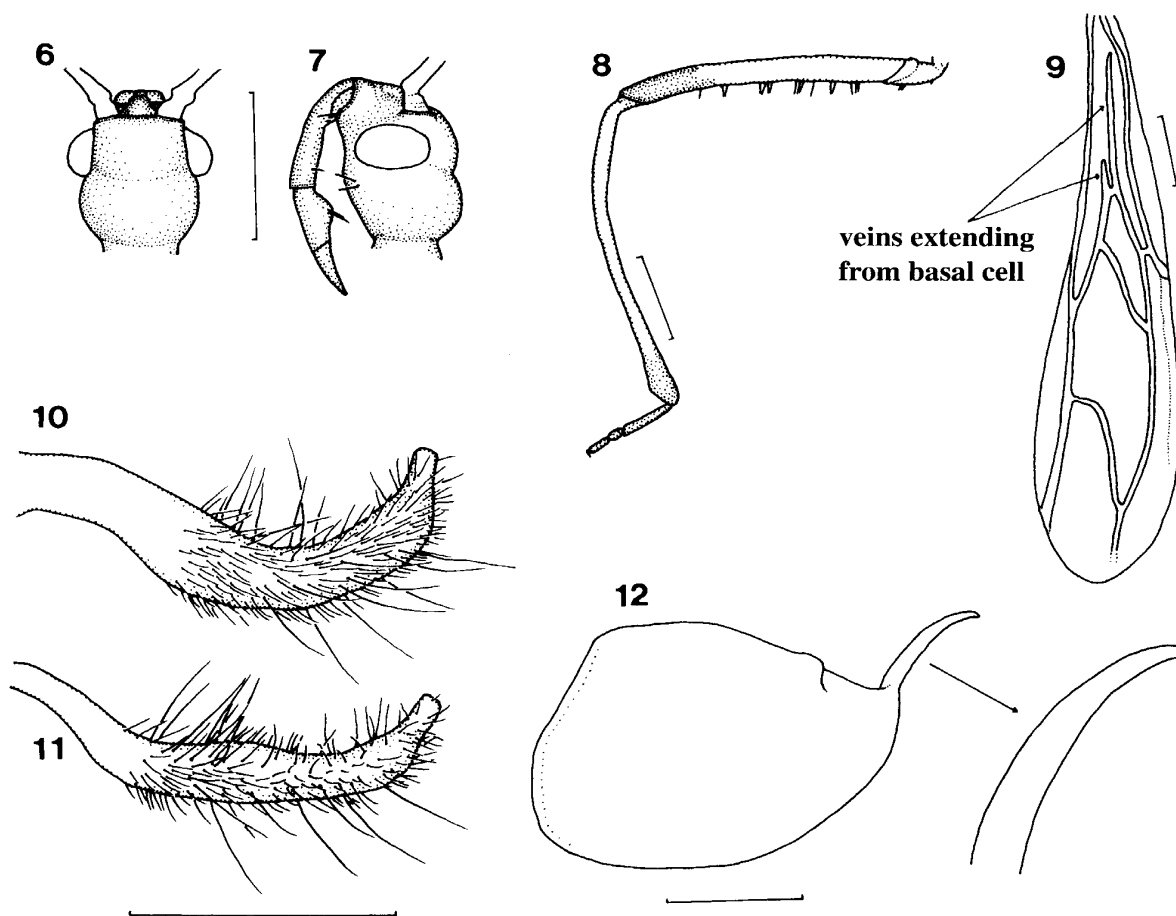
Distribution. Peninsular Malaysia (type from Selangor), Vietnam, Japan.



Figs 1–5. *Polytoxus* spp. 1, *P. eumorphus*; 2, *P. rufinervis*; 3, *P. selangorensis*; 4, *P. hiemalis* sp. nov., holotype ♂; 5, *P. hiemalis* sp. nov., holotype ♂, head and thorax, lateral view. Scales: 3.0 mm.

***Polytoxus hiemalis* sp. nov.**
(Figs 4–14)

Description of holotype (male). *Measurements* (in mm). Body length 9.3. Head length excluding neck 1.0; width across eyes 0.8; interocular space 0.5. Antenna length 9.3. Rostrum length 1.4. Pronotum length 1.7; humeral width excluding spines 1.4. Hemelytra length 6.1. Lengths of femur, tibia, and tarsus of forelegs 2.9,

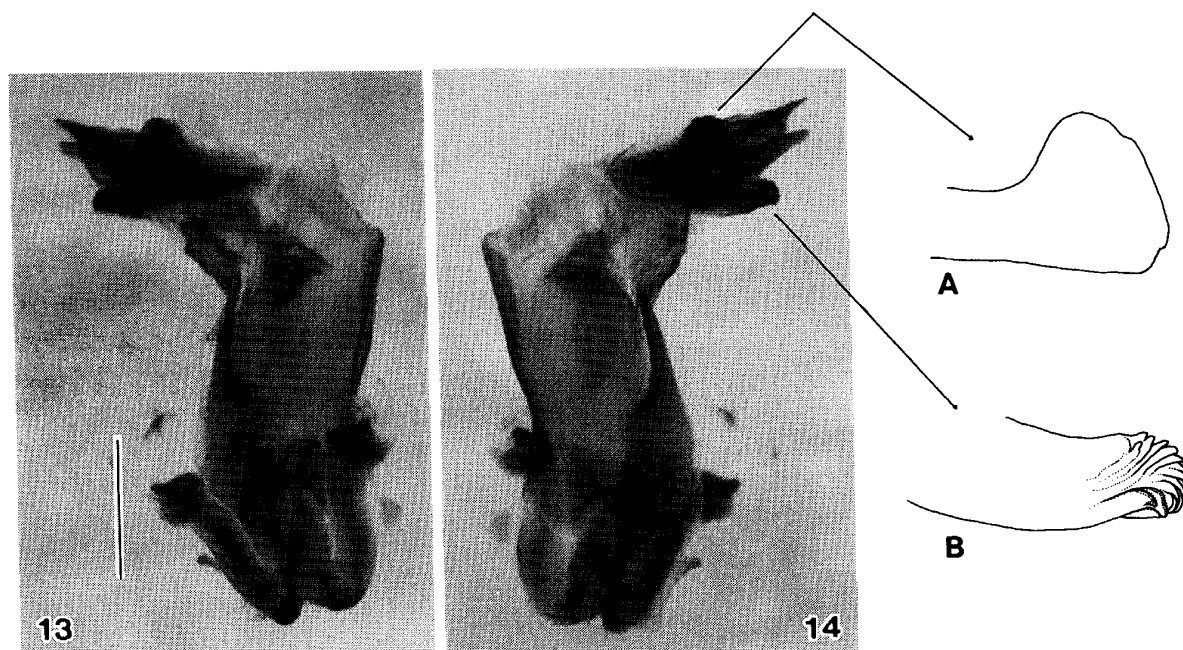


Figs 6–12. *Polytoxus hiemalis* sp. nov., holotype ♂ except for Fig. 9 (paratype ♀). Setae omitted except for Figs 10–11. 6–7, head, dorsal and lateral views; 8, foreleg; 9, left hemelytron; 10–11, left paramere, lateral and dorsal views; 12, genital capsule, lateral view. Scales: 1.0 mm for 6–9, 0.5 mm for 10–12.

3.3, and 1.0, of midlegs 3.6, 3.9, and 0.8, of hindlegs 5.1, 6.6, and 0.9, respectively.

Coloration. Body (Figs 4–5) generally brownish-yellow with black longitudinal stripe on each side running from anterior margin of prothorax to end of abdominal segment VII. Head and anterior pronotal lobe reddish-yellow; rostrum brownish-yellow. Antennae dark brown to black. Disc of posterior pronotal lobe and entire scutellum black except spines; humeral and scutellar spines yellow on basal halves, dark on apical halves, with red apices. Metanotum with red anterior projections. Legs brownish-yellow, with black annulations on apical parts of femora and tibiae (Fig. 8); tarsi dark. Hemelytra yellow, with darker, longitudinal stripe along meson (Fig. 4).

Structure. Body covered with short, erect or suberect setae. Head (Figs 6–7) oval, 1.3 times as long as width across eyes, ventrolaterally armed with 2 or 3 bristles behind eyes, and with a few pairs of bristles on anteroventral margin. Eyes prominent, less than half as wide as interocular space when seen from above (proportional widths of eye and interocular space 2:7) (Fig. 6). Antennal segments I and II covered with erect or suberect setae; longest setae longer than width of seg-



Figs 13–14. Phallus of *Polytoxus hiemalis* sp. nov., holotype ♂, dorsal (13) and ventral (14) views. Scale: 0.5 mm.

ment I; segments III and IV covered with short, decumbent setae; proportional lengths of segments I to IV 13:4:8:6. Inner surface of rostral segment I with one pair and segment II with two pairs of bristles (Fig. 7); proportional lengths of segments I to III 7:4:3.

Pronotum longer than humeral width (length:width 20:17); anterior lobe longer than posterior one (anterior:posterior 5:3); humeral spines suberect, a little more than half as long as humeral width. Scutellar spine slender, slightly sinuate, longer than humeral spine; proportional lengths of scutellar and humeral spines 5:4. Metanotum carinate along margins and meson, with pair of rounded projections anteriorly; metanotal spine short, about $1/7$ as long as scutellar spine, with blunt apex. Prothorax with pair of rounded anteroventral tubercles, apex of each furnished with a short bristle.

Legs covered with long, erect setae intermixed with dense, short, suberect setae; longest setae generally shorter than width of forefemur; foreleg with irregular interolateral row of numerous bristles from near base of femur to apical $1/4$ of tibia, and with ventral series of bristles on basal $3/4$ of femur (Fig. 8); ventral bristles half as long as width of forefemur, often placed at irregular intervals (Fig. 8). Hemelytra narrower than width of abdomen, ending just before tip of abdomen; venation as shown in Fig. 9.

Genital capsule (Fig. 12) evenly convex ventrally; median process gently curved and weakly tapering posteriorly, rounded apically, and very slightly projecting ventrally at apex. Parameres (Figs 10–11) slender, curved upward, tapering apically, rounded at apex, covered with erect setae of variable length; longest setae much longer than maximum width of paramere. Phallus with robust basal plate (Fig. 13); ventral sclerite (Fig. 14) narrowed apically, occupying right side of phallosoma in ventral view; endosoma (Figs 13–14) with 5 sclerites; sclerite A thin,

roundly widened apically; sclerite B well ridged apically.

Female. Very similar in general habitus to male. Body length 9.8 mm. Abdomen subtruncate at apex, with posterolateral angles of tergum VII triangularly protuberant posteriad.

Type series. Holotype: ♂, Near Tuyen Larn Lake, Ward 3, Da Lat, Lam Dong Prov., southern Vietnam, 22.xii.2001, T. Ishikawa. Paratype: 1♀, same data as for the holotype.

Distribution. Southern Vietnam.

Remarks. This new species is similar in general appearance to *P. femoralis* Distant, 1903 described from Myanmar, but is distinguished from the latter (its characters given in parentheses: see Distant 1903) by the brownish-yellow tibiae with black apical annulations (Fig. 4) (tibiae pale yellow with extreme bases black), the apices of the hindfemora well exceeding the tip of the abdomen (apices of hindfemora nearly reach tip of abdomen), and the margin of anterior pronotal lobe not being carinate (strongly carinate).

Etymology. The specific name “*hiemalis*”, “winter” in Latin, alludes to the winter season when the type specimens were collected.

Polytoxus bicolor Villiers, 1943

Polytoxus bicolor Villiers, 1943: 195.

Villiers (1943) originally described this species from “Tonkin: Hoa Binh” (currently Hoa Binh Province, northern Vietnam), but this species was not found



Fig. 15. Habitat of *Polytoxus hiemalis* sp. nov. at its type locality.

among specimens taken during the present study. Diagnostic characters given below are taken from the Villiers' (1943) description.

Diagnosis. Body red; antennae, legs, and abdomen black; hemelytra black with obscure yellow coria; humeral spines short, 3/4 as long as posterior pronotal lobe; median process of genital capsule straight, acute apically, and compressed laterally. Body length 18.5 mm.

Distribution. Northern Vietnam.

Habitat of the *Polytoxus* species

All specimens of *Polytoxus eumorphus*, *P. selangorensis*, and *P. hiemalis* were found in habitats composed mainly of monocots growing in moist conditions (Fig. 15).

Key to Vietnamese species of *Polytoxus*

1. Body length more than 16 mm *P. bicolor*
- Body length less than 13 mm 2
2. Hemelytron with 1 vein extending basally from base of basal (smaller) cell
..... *P. eumorphus*
- Hemelytron with 2 veins extending basally from base of basal (smaller) cell 3
3. Costal margins of hemelytra generally red *P. rufinervis*
- Costal margins of hemelytra generally yellow 4
4. Anterior pronotal lobe red with broad median black stripe; body length
generally 6–8 mm *P. selangorensis*
- Anterior pronotal lobe entirely reddish-yellow; body length 9–10 mm
..... *P. hiemalis*

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References

- Distant, W. L. 1903. Contributions to a knowledge of the Rhynchota. Annales de la Société Entomologique de Belgique 47: 43–65.
- Hsiao, T. Y. 1965. New species and new records of Reduviidae from China. Acta Zootaxonomica Sinica 2: 109–120.
- Maldonado Capriles, J. 1990. Systematic catalogue of the Reduviidae of the world (Insecta: Heteroptera). Caribbean Journal of Science, Special Edition: i–x+1–694.
- Miller, N. C. E. 1940. New genera and species of Malaysian Reduviidae. Part 1. Journal of the

Federated Malay States Museum 18: 422–599.

Miller, N. C. E. 1941. New genera and species of Malaysian Reduviidae. Supplementary records. *Journal of the Federated Malay States Museum* 18: 774–804.

Villiers, A. 1943. Note sur les Saicitae du Muséum (Hem., Reduviidae). *Bulletin du Muséum National d'Histoire Naturelle* (2) 15: 192–199.